

## CLAIMS:

- 5 *Sub B2* 1. An aggregated composition comprising (a) a polypeptide having the transport function of VP22, and (b) an oligonucleotide or polynucleotide.
2. An aggregated composition according to claim 1, which further comprises a pharmaceutically acceptable excipient.
- 10 *Sub B3* 3. An aggregated composition according to claim 1, wherein the polypeptide is a VP22 fragment comprising amino acid residues 159-301 of VP22.
4. An aggregated composition according to claim 1, wherein the oligonucleotide or polynucleotide comprises a circular plasmid.
- 15 5. An aggregated composition according to claim 1, wherein the oligonucleotide or polynucleotide comprises modified phosphodiester linkages.
6. An aggregated composition according to claim 5, wherein the modified phosphodiester linkages comprise phosphorothioate linkages.
- 20 7. An aggregated composition according to claim 1, wherein the oligonucleotide or polynucleotide is labeled with a detectable label.
- 25 Sub A1* 8. An aggregated composition according to claim 1, wherein the oligonucleotide or polynucleotide is selected from the group consisting of: an antisense molecule, a ribozyme molecule, a chimeroplast, and a polynucleotide capable of binding a transcription factor.
- 30 9. An aggregated composition according to claim 1, wherein the oligonucleotide or polynucleotide encodes a protein or peptide.

10. An aggregated composition according to claim 1, wherein the polypeptide is a fusion protein comprising a non-VP22 peptide or protein.

Sub BH  
5 11. An aggregated composition according to claim 10, wherein the non-VP22 polypeptide sequence is linked to the polypeptide having the transport function of VP22 by a cleavage-susceptible amino acid sequence.

12. An aggregated composition according to claim 1, wherein the polypeptide is conjugated to a glycoside.

10 13. An aggregated composition according to claim 1, wherein the oligonucleotide or polynucleotide is coupled to a non-nucleotide molecule.

15 14. An aggregated composition according to claim 1, wherein the aggregate comprises polypeptide and nucleotide in a ratio of at least 1 to 1.

15. An aggregated composition according to claim 1, wherein the oligonucleotide or polynucleotide comprises at least about 10 bases.

20 16. An aggregated composition according to claim 1, which comprises particles of said aggregated composition having a particle size in the range of about 0.1 to about 5 microns.

25 17. An aggregated composition according to claim 1, wherein said polypeptide and said nucleotide are encapsulated in a liposome.

Sub A2  
30 18. A method of making an aggregated composition according to claim 1 comprising, (a) mixing a polypeptide with the transport function of VP22, with the oligonucleotide or polynucleotide, and, (b) allowing the mixture obtained in step (a) to form aggregates.

5 <sup>sub</sup> 20. A method of delivering molecules to a cell in vitro comprising (a)  
Ble contacting said cell with an aggregated composition according to claim 1.

3 22. The method of claim 18, wherein the aggregates have a particle size of about 0.1 to about 5 microns.

23. The method of claim 20, further comprising (b) exposing the cell to light to promote disaggregation of the aggregated composition.

**THE UNIVERSITY OF CHICAGO**